IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:	Siddhartha Nandi, Abhay Kumar Singh, Oleg Kiselev
Assignee:	VERITAS Operating Corporation
Title:	System And Method For Dynamically Loadable Storage Device I/O Policy Modules

Application No.	10/717,037	Filing Date:	November 19, 2003
Examiner:	Justin King	Group Art Unit:	2111
Docket No.:	VRT0091US	Confirmation No.:	7317

Austin, Texas
June 27, 2006

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

This request is submitted along with a Notice of Appeal under 37 CFR § 41.31, and is responsive to the final Office action dated March 27, 2006, having a shortened statutory period set to expire June 27, 2006. Further examination and consideration are requested.

Remarks

Claims 1-36 are pending. Claims 1-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the alleged admitted prior art and Koclanes et al., U.S. Patent Publication No. 2004/0243699 (Koclanes).

Koclanes and the alleged admitted prior art neither teach nor suggest a method including:

> receiving a request to load a device policy module into a memory, wherein the device policy module is for use by a device driver, and wherein the device policy module includes at least one of a function, a procedure, and an object-oriented method operable to perform at least one of input/output

(I/O) operation scheduling, path selection, and I/O operation error analysis;

loading the device policy module into the memory; and

informing the device driver of availability of the device policy module,

as required by independent claim 1, and generally required by independent claim 29.

Regarding receiving a request to load a device policy module into memory, the Examiner refers (FOA of March 27, 2006, p. 3, ¶1) to paragraph 0017 of Koclanes which states:

> In one aspect, policy based management of storage resources in a storage network is accommodated by associating service level objectives with storage resource requesters such as applications. A set of policy rules is established in connection with these service level objectives. An update of the configuration of the storage network, such as a provisioning of storage resources for the application, is performed according to a workflow that implements the policy rules, which allows the service level objectives of the application to be automatically satisfied by the new provisioning.

It is further the Examiner's position that Koclanes' "set of policy rules" teaches the applicants' claimed device policy module and that "Koclanes explicitly discloses a set of policy rules established in connection with different service level objectives (abstract). The operation to carry out these policy rules is the claimed request to load the set of policy." (FOA of March 27, 2006, p. 11, no. 5). The applicants respectfully disagree.

While Koclanes teaches that his policy rules are used to implement a workflow for configuration of a storage network (Abstract), he also teaches that the policy rules are maintained in a policy rules database (¶0038), derived using the process of Figure 3, and used by monitoring system module 706 (¶0098). Koclanes' policy rules are clearly not "a device policy module," but rather a collection of policy rule data stored in a database. Moreover, the mere use of policy rules, as suggested by the Examiner, is not a teaching of a request to load policy rules, and particularly a request to load a *device policy module.* As such, Koclanes fails to teach or suggest the claimed operation of "receiving a request to load a device policy module into a memory."

Regarding the applicants' claim requirement that "the device policy module is for use by a device driver," the Examiner refers (FOA of March 27, 2006, p. 3, ¶1) to paragraph 0037 of Koclanes, which states:

> In one aspect, policy-based management of storage resources incorporates automatically meeting a set of service level objectives (SLOs) driven by policy rules. Optionally, these SLOs may correspond to a service level agreement (SLA). Some of the policy rules are technology driven, such as those that pertain to how a particular device is managed. Others may be more business oriented. For example, a business policy may mandate that a particular application is a mission critical application. Rules corresponding to that business policy could include a requirement for redundancy and synchronous recovery for any storage resources used by the mission critical application.

Nothing in the cited portion of Koclanes teaches or suggests the use of *anything* by a device driver, least of all Koclanes' policy rules, i.e., that which the Examiner equates with the claimed "device policy module."

The Examiner goes on to state (FOA of March 27, 2206, p. 11, no. 6) that "Koclanes discloses a set of policy rules in connection with different service objectives in managing a storage resources; and the storage resources has to be operated by its associated driver. Thus, Koclanes' policy rules are used by a device driver." The applicants respectfully disagree with the Examiner's conclusion. Even assuming the Examiner's characterization of Koclanes is correct (and the applicants do not concede this point), it does not follow that a device driver uses Koclanes' policy rules. Use of policy rules *might indirectly* affect whether or not a particular storage device is used, but the mere use of a storage device (and consequently the device's device driver) does not teach that the policy rules are "for use by a device driver." Koclanes makes no mention of device drivers anywhere in the patent, and thus provides no description of how a device driver might directly use the policy rules.

Regarding the claim requirement that "the device policy module includes at least one of a function, a procedure, and an object-oriented method operable to perform at least one of input/output (I/O) operation scheduling, path selection, and I/O operation error analysis," the Examiner presents no argument, either in the main section of his Final

Office Action or the Response to Arguments section. Moreover, the applicants can find no teaching or suggestion in Koclanes that the policy rules (i.e., that which the Examiner equates with the claimed "device policy module") include "at least one of a function, a procedure, and an object-oriented method operable to perform at least one of input/output (I/O) operation scheduling, path selection, and I/O operation error analysis," as required.

Regarding the claimed "informing the device driver of availability of the device policy module," the Examiner now refers (FOA of March 27, 2006, p. 11, no. 7) to step 304 of in Figure 3 Koclanes and states "Koclanes discloses receiving the group policy . . . which is equivalent to the claimed 'informing the device driver of availability of the device policy module.'" Regarding step 304, Koclanes states in relevant part "[a]s indicated, initially the application and grouping are defined 302. The application may be part of a group of applications, in which case the application inherits 304 the policy rules of the group. All policies and their associated rules are kept in a policy database 352." ¶0071. Thus, Koclanes merely teaches that some policy rules may already exist and that such rules will be inherited as part of defining the set of policy rules for some service level objective. There is simply no mention of a device driver being informed of anything, let alone the existence or availability of Koclanes' policy rules, which the Examiner equates with the claimed device policy module.

As to independent claim 14, regardless of whether the DMP driver 135 in the applicants' specification is or is not prior art, the Examiner continues to fail to show how any prior art DMP driver teaches or suggests the inclusion of "an interface configured to communicate with a device policy module . . . ." The Examiner does not address this limitation in either the main section or the Response to Arguments section of his Final Office Action. As noted above, Koclanes fails to teach or suggest a device policy module, and similarly fails to teach or suggest a DMP driver with (or even the need for, generally) an interface configured to communicate with a device policy module.

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Finally, the applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. In addition to the claim elements not taught or suggested by the cited references as described above, the Examiner has not shown that there is some suggestion or motivation to combine Koclanes and the purportedly admitted prior art, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Neither reference suggests such a combination, and the Examiner merely refers to purported problems in storage management (e.g., paragraph 0006). The applicants respectfully submit that the Examiner has failed to explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination, as required by, for example, *In re Rouffet,* 47 USPQ2d 1453 (Fed. Cir. 1998).

Accordingly, the applicants respectfully submit that independent claims 1, 14, and 29 are allowable over Koclanes and the purportedly admitted prior art. Claims 2-13 depend from independent claim 1 and are allowable for at least this reason. Claims 15-28 depend from independent claim 17 and are allowable for at least this reason. Claims 30-36 depend from independent claim 29 and are allowable for at least this reason.
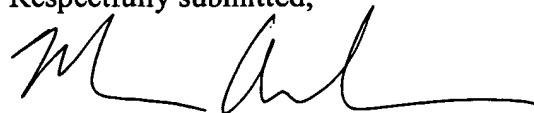
In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on

_____, 2006.

_____   6/27/06
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Respectfully submitted,

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